



# Area UXO 1 Wharf Area Sediments Expanded Site Inspection

St. Juliens Creek Annex RAB Meeting
November 13, 2013

## **Purpose**



- Provide an overview of Area UXO 1 Wharf Area Sediments
- Discuss some of the challenges of investigating underwater munitions response sites
- Provide details of the Expanded Site Inspection field activities
- Present the Expanded Site Inspection results and conclusions
- Solicit questions or comments

### **Area UXO 1 Site Information**



- Current & former wharf areas along the Southern Branch of the Elizabeth River
  - -Northern Wharf Area
    - -Constructed in 1917
    - Used for loading/unloading munitions, particularly Mark VI mines, until mid 1930s
  - -Southern Wharf Area
    - -Constructed in 1898
    - Used for loading/unloading munitions until mid 1970s
    - Still in use, but not for munitions loading/unloading
- -Preliminary Assessment (2009)
  - Conducted to determine potential for munitions or munitions constituents to be present
  - No documentation found to confirm presence of munitions in wharf areas
  - Anecdotal evidence obtained (interviews) indicated a potential for munitions to have been dropped during operations



## Challenges of Investigating Underwater Munitions Response Sites



#### Dynamic Environment

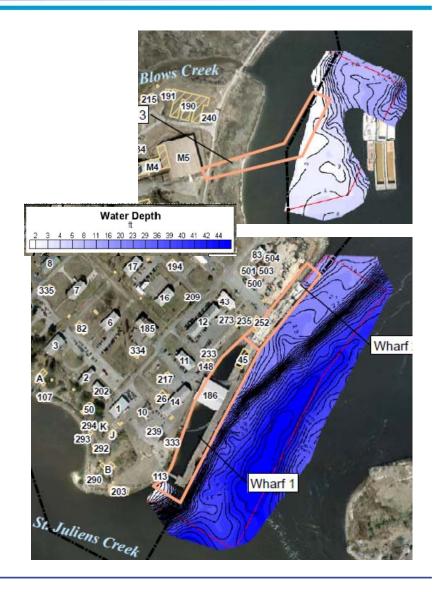
- -Water current and ebb/flow of tides
- -Sedimentation

#### Community Impacts

- -Boat traffic
- Neighboring properties

#### Physical Characteristics

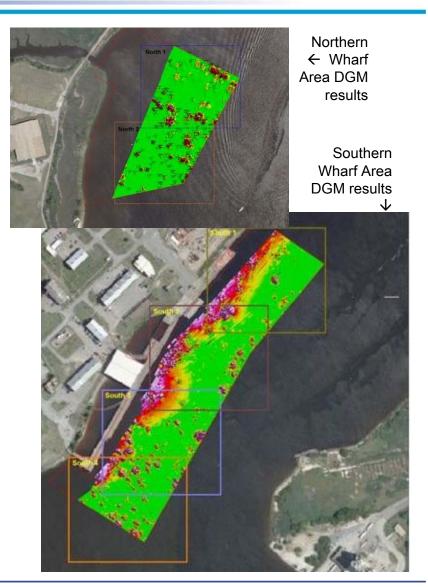
- -Underwater visibility very poor
- -"Chocolate pudding" sediment
- Variation in water depth/river bottom grade
- -Debris



## Site Inspection (2010)



- Bathymetric survey to determine depth of the river
- Underwater digital geophysical mapping (DGM) survey to identify metallic debris (geophysical anomalies)
  - -265 anomalies in northern wharf area
  - -1,386 anomalies in southern wharf area
- Conclusion:
  - Metallic debris (represented by geophysical anomalies) is present in the river; may or may not be munitionsrelated
- Recommendation: Visually inspect a subset of anomaly sources



## **Expanded Site Inspection (2012)**



•15 locations selected from which to acquire anomaly sources for inspection and collect sediment samples for explosives analysis



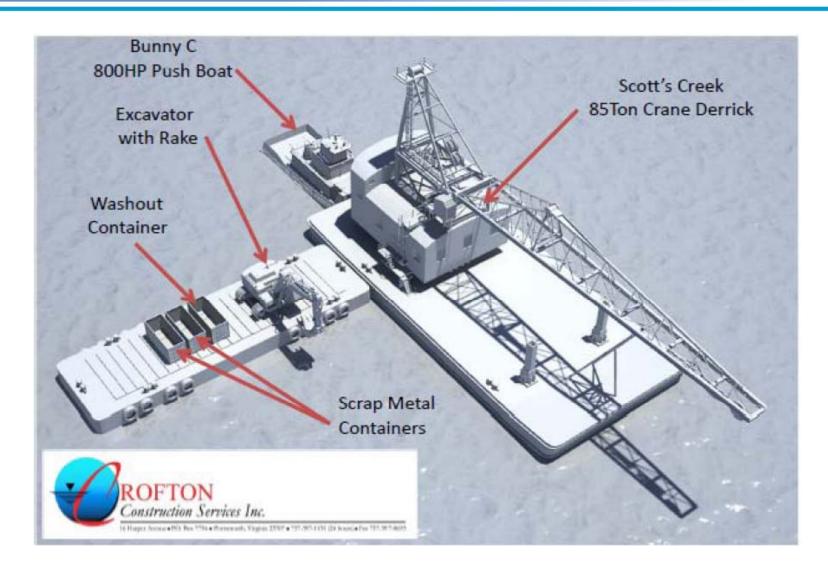






## **Investigation Layout**





## **General Investigation Process**









deploy silt curtain

→ deploy magnet, inspect

rake sediment  $\rightarrow$ 



deploy magnet, inspect



place materials on screen



inspect items for munitions

## Expanded Site Inspection Results



Location 1A

Location 2A

- No munitions encountered
- One explosive constituent detected in sediment samples
  - –Low frequency of detection (3 locations)
  - -Low magnitude of detection
  - -No unacceptable risks to receptors



### **Expanded Site Inspection Conclusions**



- No munitions or explosives of concern (MEC)/material potentially presenting an explosive hazard (MPPEH)
  - Recovered various types of debris, making decision makers confident that equipment would have recovered MFC/MPPFH if encountered
    - Approximately 1 ton of metallic material
    - Shackle, crane hook, rebar, steel plates, metal poles, steel pipe, cable, pier bolts, etc.
- Exposure to sediment not expected to adversely impact human or ecological receptors
- Partnering team agreed to site closure with no further action required

#### Declaration

#### Site Name and Location

Area UXO 1 – Wharf Area Sediments St. Juliens Creek Annex Chesapeake, Virginia

#### Statement of Basis and Purpose

This Statement of Basis and Purpose and stakeholder signatures documents the conclusion that no further action (NFA) is necessary to ensure protection of human health and the environment at Area Unexploded Ordnance (UXO) 1, St. Juliens Creek Annex (SJCA), Chesapeake, Virginia. This determination has been made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the Expanded Site Inspection (ESI) report and information contained in the Administrative Record for the site. The United States Navy (Navy), in partnership with the United States Environmental Protection Agency (USEPA) Region 3 and Virginia Department of Environmental Quality (VDEQ), concurs with the NFA determination.

#### Rationale for No Further Action Determination

Based on the results of the ESI, no potentially unacceptable human health or ecological risks and no contaminant releases were identified at Area UXO 1. Because there are no hazardous substances, pollutants, or contaminants remaining onsite above levels that prevent unlimited use and unrestricted exposure, NFA is necessary for the site.

#### **Authorizing Signatures**

Virginia Department of Environmental Quality

rista Parra ernedial Project Manager laval Facilities Engineering Command, Mid-Atlantic	Date
lovel Englisher Empireoring Command Adid Atlantic	
avai raciitues engineering command, wilo-Atlantic	
Alux thon	6-28-13
obert Stroud lemedial Project Manager	Date
Inited States Environmental Protection Agency Region 3	
Kann M. Dora	6-26-13
aren Doran	Date
emedial Project Manager	

#### Successes



- Despite difficulties associated with investigation of an underwater site within an urban water body, the objective of the investigation was met through the use of the electromagnet
- Innovative use of the electromagnet reduced the investigation cost by approximately 50% in comparison to use of a more conventional clam shell dredge
- Suspended sediment was limited and contained within the turbidity curtain
- Generated minimal investigation-derived waste, 100 percent of which was recycled, thus reducing cost and environmental impacts. 1,200 CY of sediment for disposal was anticipated if a clam shell dredge was used
- Completed investigation without any safety incidents
- Received no significant findings from a Naval Ordnance Safety and Security Activity (NOSSA) audit



## Questions/Comments?